

### Listing of Claims

- Claim 1 (Currently Amended): A method of treating a metal surface comprising:
- a) roughening the metal surface;
  - b) priming the roughened metal surface with a liquid primer composition comprising one or more organo-silicon compounds, one or more silsequioxanes, or mixtures thereof, and an organic polymer, an organic oligomer, an organic monomer, or mixtures thereof; and
  - c) applying a polymer material to the roughened metal surface with the liquid primer to form a bond with the roughened metal surface.
- Claim 2 (Original): The method of claim 1, wherein mechanical pressure, heat or combinations thereof are applied to form the bond between the polymer material and the roughened metal surface.
- Claim 3 (Withdrawn): The method of claim 1, wherein the organic polymer comprises a polyimide, a poly(meth)acrylate, a polycyanoacrylate, a rubber, a polyurethane, a butadiene, or mixtures thereof.
- Claim 4 (Withdrawn): The method of claim 1, wherein the organic oligomer comprises a urethane oligomer.
- Claim 5 (Withdrawn): The method of claim 1, wherein the organic monomer comprises a (meth)acrylate, an isocyanate, melamine glycoluril cross-linker, or a heat activated methylol.
- Claim 6 (Withdrawn): The method of claim 1, wherein the liquid primer further comprises one or more epoxy.
- Claim 7 (Canceled)
- Claim 8 (Original): The method of claim 1, wherein the organic polymer, organic oligomer, or organic monomer comprises from 0.5% by weight to 95% by weight of the liquid primer.
- Claim 9 (Original): The method of claim 1, wherein the metal surface is roughened by a chemical or mechanical process.

Claim 10 (Original): The method of claim 9, wherein the chemical method is an alternative oxide solution.

Claim 11 (Original): The method of claim 1, wherein the bond has a peel strength of from 4-10 pounds per linear inch.

Claim 12 (Original): The method of claim 11, wherein the bond has a peel strength of from 6-8 pounds per linear inch.

Claim 13 (Original): The method of claim 1, wherein the metal comprises copper, nickel, gold, silver, tin, lead, iron, or mixtures thereof.

Claim 14 (Original): The method of claim 12, wherein the polymer material comprises a pre-preg, an imageable dielectric, a photoimageable resin, a soldermask, an adhesive, or a polymeric etch resist.

Claim 15 (Original): The method of claim 12, wherein the roughened and primed metal layer bonded with the polymer material is a layer of a multi-layer circuit board.

Claim 16 (Withdrawn): A method of treating a metal comprising:

- a) mechanically roughening the metal;
- b) priming the roughened metal with a liquid primer composition comprising an organic polymer, an organic oligomer, an organic monomer, or mixtures thereof; and
- c) applying a polymer material to the roughened metal with the liquid primer to form a bond with the roughened metal.

Claim 17 (Withdrawn): The method of claim 16, wherein the metal is mechanically roughened by air blasting, hand rubbing, brushing, or mechanical wheels.

Claim 18 (Withdrawn): The method of claim 17, wherein an abrasive used in mechanical roughening comprises diamond, garnet, or pumice.

Claim 19 (Currently Amended): A method ~~or~~ of treating a metal comprising:

- a) chemically roughening the metal with an adhesion promotion composition comprising an oxidizer, an inorganic acid, or mixtures thereof;

b) priming the roughened metal with a liquid primer composition comprising one or more organo-silicon compounds, one or more silsesquioxanes, or mixtures thereof, and an organic polymer, an organic oligomer, ~~and~~ an organic monomer, or mixtures thereof; and

c) applying a polymer material to the roughened metal with the liquid primer to form a bond with the roughened metal.

Claim 20 (Original): The method of claim 19, wherein the polymer material is an inner-layer of a multi-layer printed circuit board.